

Claims

1. A method for producing a semiconductor chip, comprising:
  - 5 applying a photothermal conversion layer comprising a light-absorbing agent and a heat decomposable resin on a light-transmitting support, provided that upon irradiation of radiation energy, said photothermal conversion layer converts the radiation energy into heat and decomposes due to the heat,
  - 10 preparing a semiconductor wafer having a circuit face with a circuit pattern and a non-circuit face on the side opposite said circuit face, laminating said semiconductor wafer and said light-transmitting support through a photocurable adhesive by placing said circuit face and said photothermal conversion layer to face each other, and irradiating light from said light-transmitting support side to cure the photocurable adhesive layer, thereby forming a laminated body having a non-circuit face on the outside surface,
  - 15 grinding the non-circuit face of said semiconductor wafer until said semiconductor wafer reaches a desired thickness,
  - 20 dicing the ground semiconductor wafer from the non-circuit face side to cut it into a plurality of semiconductor chips,
  - 25 irradiating radiation energy from said light-transmitting support side to decompose said photothermal conversion layer, thereby causing separation into semiconductor chips having said adhesive layer and a light-transmitting support, and optionally
  - 30 removing said adhesive layer from said semiconductor chips.
2. The method for producing a semiconductor chip as claimed in claim 1, wherein a die bonding tape is affixed to the semiconductor wafer before dicing the ground semiconductor wafer.
3. The method for producing a semiconductor chip as claimed in claim 1 or 2, wherein said photothermal conversion layer contains carbon black.
4. The method for producing a semiconductor chip as claimed in claim 3, wherein said photothermal conversion layer further contains a transparent filler.

5. The method for producing a semiconductor chip as claimed in any one of claims 1 to 4, wherein laminating said semiconductor wafer and said light-transmitting support through a photocurable adhesive is performed in a vacuum.

5 6. The method for producing a semiconductor chip as claimed in any one of claims 1 to 5, wherein said semiconductor wafer is ground to a thickness of 50  $\mu\text{m}$  or less.

10 7. The method for producing a semiconductor chip as claimed in any one of claims 1 to 6, wherein said photocurable adhesive layer has a storage modulus of  $5 \times 10^8 \text{ Pa}$  or more after curing.

15 8. The method of any of claims 1-7, wherein dicing is performed while recognizing scribe lines, and with alignment via light capable of passing through a) the light-transmitting support and photothermal conversion layer from said light-transmitting support side or b) the semiconductor wafer from the non-circuit side.